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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,322	12/10/1999	STEPHEN J. ZACK	533/198	8722

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EXAMINER	
HUYNH, SON P	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/458,322	ZACK ET AL.	
	Examiner	Art Unit	
	Son P. Huynh	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 03 May 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 32-44 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 32-44 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 02 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 05/03/2005 have been fully considered but they are not persuasive.

Applicant argues, "The Examiner acknowledges that formatting non-content data for transmission is not taught, suggested, or disclosed in Adams. Thus, "wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams" is not taught, suggested or disclosed by Adams (page 7, paragraphs 4-5).

In response, the examiner respectfully disagrees with Applicant's argument. Nowhere in the Office Action mailed on 02/24/2005 indicates, "the Examiner acknowledges that formatting non-content data for transmission is not taught, suggested, or disclosed in Adams." as argued by the Applicant. Instead, the Examiner acknowledges Adams does not specifically disclose the multiplexer is for formatting non-content data (see page 3, lines 16-17). Furthermore, Adams discloses the application data (read on the claimed "non-content data") is transmitted in Internet Protocol (IP) format (col. 3, lines 40-45) or the application data stored in application buffer 402 is preferably in the form f an MPEG-2 transport packet (col. 4, lines 34-51). Thus, Adams discloses formatting non-content data (application data) in IP format or MPEG-2 format. In addition, Adams further

discloses a statistical multiplexer 208 for multiplexing application data into the wasted bandwidth of the video stream (col. 6, line 61-col. 4). The application data is fill in the available bandwidth of the video stream when all video buffers are empty (col. 5, lines 8). The non-video data (or application data) is controlled so as to fill available bandwidth in the 6 MHz multiplexed channel (col. 7, lines 25-27). Therefore, the claimed feature of "said multiplexing of formatted non-content data is on a bandwidth available basis that is predicted based on said multiplexing of said formatted content streams." is broadly met by multiplexing the formatted application data (in IP format or MPEG-2 format) is on the available bandwidth basis (waste bandwidth or when the video buffers are empty) that is determined by the selector based on the multiplexing/selecting of the formatted (preferably in MPEG-2) video streams.

Applicant further argues Voois fails to suggest, teach or disclose, "multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams" (page 8, lines 3-6).
In response, the Examiner respectfully disagrees with this argument. Voois discloses a multiplexer for receiving video data and other types of data from different sources. The data received from different sources is formatted, and multiplexed for transmission over communication channel 12. The multiplexer/data processing equipment (MDPE) 24 monitors the available channel bandwidth and, based on its capability to transmit additional data, collects and formats the data collected from each of the input sources so as to maximize the amount of data to be transmitted over the channel 12 (col. 5,

lines 5-35; col. 6, line 57-col. 7, line 67). Thus, the claimed feature of "multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams" is broadly met by multiplexing of formatted additional data is on a bandwidth availability basis that is determined based on the multiplexing of formatted content streams (content stream with high-priority data).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Adams discloses a system wherein the video data and application data are formatted, multiplexed into a stream for transmitting over a channel to the receiving device (figures 1-4). Adams further discloses the data with lower priority (application data) is multiplexed and transmitted based on available bandwidth of the content streams (col. 4, line 65-col. 5, line 28; col. 6, lines 62-67; col. 7, lines 25-27). The controller/selector is used to determine available bandwidth to fill the application data in the available bandwidth for transmission to the receiving device when available bandwidth is determined (i.e., all video buffers are empty- col. 5, line 1-7; col. 7, line 5-27).

Voois also discloses a system wherein video data and other data are received, formatted, multiplexed into a stream for transmitting over a channel to the receiving device (figures 1, 3). Voois further discloses the data with lower priority (additional data) is multiplexed and transmitted based on available bandwidth of the content streams (col. 5, lines 23-35; col. 6, line 57-col. 7, line 67). The multiplexer is used to determine available bandwidth to fill additional data in the available bandwidth for transmission to the receiving device when available bandwidth is determined (col. 5, lines 23-31; col. 6, line 57-col. 7, line 67). Voois further discloses the multiplexer (reads on the claimed multiplex switch" further for formatting non-content data (formatting collected data for transmitting as additional data – col. 5, lines 24-30; col. 6, lines 25-35, lines 57-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiplexer for formatting the non-content data as taught by Voois in order to maximize the amount of data to be transmitted over the channel (col. 5, lines 25-28), and furthermore, to expand capability of the multiplexer. Therefore, the combination of the references is proper.

For the reason given above, rejections on claims 32-44 are maintained and are analyzed as discussed below.

Claims 1-31 have been canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 32-34,36-41,43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (US 6,044,396) in view of Voois (US 6,404,776).

Regarding claim 32, Adams teaches an information distribution system comprising server equipment (server source 115) for providing both content and non-content data (video data and application data) to subscriber equipment (terminal nodes 105)-figure 1, the server equipment comprising:

a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel wherein the multiplexing of the formatted content streams is statistical performed (statistical multiplexer 208 for multiplexing a plurality of encoded video streams from the media servers in conventional round robin fashion to produce an output stream that is adapted for transport via communication channel 210 – figure 2 and col. 3, lines 60-67; col. 4, lines 26-67), wherein the multiplexing is further for selectively multiplexing formatted non-content data into the output stream (selector 404

passes stored from the application buffer, which is preferably in form of an MPEG-2 transport packet, to the output buffer 406 – col. 4, lines 35-50; col. 5, lines 3-4), and wherein the multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on the multiplexing of the formatted content streams (the selector 404 passes data from application buffer 402 to the output buffer if and when all video buffers 400 are empty – col. 5, lines 1-8). However, Adams does not specifically disclose the multiplexer is for formatting non-content data.

Voois discloses multiplexer for formatting data collected from data sources (col. 5, lines 25-30; col. 6, lines 25-40, lines 57-67), and data is multiplexed on a bandwidth availability basis that is predicted based on the multiplexing of the formatted content streams (col. 9, lines 26-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Adam with the teaching as taught by Voois in order to maximize the amount of data to be transmitted over a channel (col. 5, lines 25-28), and furthermore, expand capability of the multiplexer.

Regarding claim 33, Adams further teaches the multiplex switch includes a buffer (application buffer 402) for storing non-content data and a switch controller (selector 404) for determining a bandwidth utilization level of the multiplex switch, the switch controller further for causing at least a portion of the non-content data in the buffer to be multiplexed into the output stream when the bandwidth utilization level falls below a threshold utilization bandwidth level (the selector decides which data stream is to be

given access to a channel of the network, if and when all video buffers 400 are empty, the selector passes data from the application buffer 402 to the output buffer 406 – col. 4, line 52-col. 5, line 8- Thus, the threshold utilization bandwidth level is met by the bandwidth level when all video buffers 400 are empty).

Regarding claim 34, Adams further discloses the threshold bandwidth utilization level comprises a utilization level sufficient to process a single time extent (service interval for data in each video buffer until the video buffer is empty). Adams further discloses data stored in each buffer is in the form of an MPEG-2 transport packet (col. 4, lines 43-50). The video data is provided to video buffers 400 after they are empty (col. 1, lines 1-8). Thus, the content streams are divided into a plurality of respective time extents (the time extent is met by the service period for video data in each video buffer 400 and new video data stored in the buffers after the buffers 400 were empty).

Regarding claim 36, Adams further teaches the non-content data comprises control data (control information) and non-control data (application data and application programs), and the multiplex switch preferentially multiplexes the non-content control data (see col. 3, lines 40-52, col. 4, lines 57-64, col. 6, lines 61-67).

Regarding claim 37, Adams further teaches the non-content data comprises control data (control information) and non-control data (application data and application

programs), and the multiplex switch preferentially multiplexes the control data (see col. 3, lines 40-52, col. 4, lines 57-64, col. 6, lines 61-67).

Regarding claim 38, Adams further teaches the content data includes MPEG data (see col. 4, lines 48-49; col. 5, lines 14-45).

Regarding claim 39, Adams further teaches the non-content data includes Internet protocol data (see col. 3, lines 43-44).

Regarding claim 40, the limitations of the method as claimed correspond to the limitations of the system as claimed in claim 32 and are analyzed as discussed with respect to the rejection of claim 32.

Regarding claim 41, Adams teaches storing non-content data until bandwidth availability enables multiplexing of the stored non-content data (application data is stored in application buffer 402. If and when all video buffers 400 are empty, the selector 404 passes data from the application buffer 402 to the output buffer and the application data, application program, control information are transmitted in waste bandwidth – see col. 5, lines 1-8, col. 6, lines 63-67).

Regarding claim 43, Adams teaches the output stream in an MPEG data stream (col. 4, lines 48-49; col. 5, lines 13-14).

Regarding claim 44, Adams teaches receiving the non-content data in an Internet protocol format (col. 3, lines 43-44).

4. Claims 35 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (US 6,044,396) in view of Voois (US 6,404,776) as applied to claims 33 and 40 above, and further in view of Krause et al. (US 5,877,812).

Regarding claim 35, Adams in view of Voois discloses a system as discussed in the rejection of claim 33. Adams further discloses each of the content streams is divided into a plurality of respective time extents (time period associated with each data portion in each of the video buffers 400 – col. 5, lines 1-10). However, neither Adams nor Voois specifically discloses the multiplexer can multiplex a predetermined number of time extends into the output stream.

Krause discloses partitioning program streams into variable size packets wherein each packet contains the compressed data corresponding to a fixed number of fixels. a fixed interleaving scheme may be used when multiplexing the packets from each of the n segments (col. 7, lines 1-11). Thus, the multiplexer can multiplexes a predefined number of time extents (e.g., time period associated with each packet) into the output stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Adams and Voois to use the teaching as taught

by Krause in order to control amount of data content multiplexed in the stream thereby improving utilization of memory space at the receiver.

Regarding claim 42, the limitations of the method as claimed correspond to the limitations of the system as claimed in claim 35, and are analyzed as discussed with respect to the rejection of claim 35.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsuramoto et al. (US 6,510,555) discloses information providing apparatus and method, information receiving apparatus and method, and transmission medium.

Takasu et al. (2001/0028784) discloses editing apparatus and data editing method.

EP (1 414 246 A2) discloses electronic program guide multiplexed in and MPEG stream.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPH
July 5, 2005

CHRIS GRANT
PRIMARY EXAMINER